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For Appellant

EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed May 04, 1995.

(1) *Status of claims.*

The statement of the status of claims contained in the brief is correct.

(2) *Status of Amendments After Final.*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(3) *Summary of invention.*

The summary of invention contained in the brief is correct.

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(4) Issues

The appellant's statement of the issues in the brief is substantially correct. The changes are as follows: upon further consideration, issue number 2 is dropped and claims 5 and 15 are deemed allowable over the prior art references as applied to claim 1 and 11, and further in view of Yamamoto.

(5) *Grouping of claims.*

Appellant's brief includes a statement that claims 1, 3, 5, 6, 7, 8, 11, 12, 13, 15, 16, 17 and 18 do not stand or fall together and provides reasons as set forth in 37 C.F.R. § 1.192(c) (5) and (c) (6).

(6) *Claims appealed.*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(7) *Prior Art of record.*

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

4,464,832	ASICK ET AL.	AUGUST 14, 1984
3,760,335	ROBERTS	SEPTEMBER 18, 1973
5,085,601	BUCHTER ET AL.	FEBRUARY 04, 1992
4,653,825	OLSSON	MARCH 31, 1987

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(8) *New prior art.*

No new prior art has been applied in this examiner's answer.

(9) *Grounds of rejection.*

The following ground(s) of rejection are applicable to the appealed claims.

Claim Rejections - 35 USC § 103

1. Claims 1, 3, 4, 6-9, 11-14 and 16-19 are rejected under 35 U.S.C. § 103 as being unpatentable over Roberts, Olsson or Buchter et al. in view of Asick et al.

The primary references to Roberts, Olsson and Buchter et al. each discloses an electrical connector comprising: an insulative housing (see insulative housing 16 of Roberts, insulative housing 4 of Olsson, and insulative housing 68 of Buchter et al.). Each of the prior art connector housings contain conductive contacts within an interior of the housings (contacts 50 of Roberts, contacts 82 of Buchter et al. as shown in figures 2-3, and contact terminals 6 of Olsson). The above prior art connector housings each lacks to disclose wiping surfaces on a mating end of the connector in the manner as recited in the finally rejected claims of the instant invention (e.g., conductive surfaces on the contacts being rearward of the wiping surfaces and offset laterally of the wiping surfaces to

engage unwiped surface areas of mating contacts of another, mating connector, which mating contacts wipe against the wiping surfaces prior to engagement of the unwiped surface areas of the mating contacts with the conductive surface areas of the contacts). However, Asick et al. (as shown in figures 6-7) discloses mating end ramp wiping surfaces 78 that are offset laterally with respect to the conductive surfaces of the contacts 80. The conductive central surfaces (readable on surfaces that actually come into electrical contact with mating surfaces 102 of the mating contacts) of contacts 80 being rearward of the ramp wiping surfaces 78 as clearly shown in figure 7 of Asick et al. and are laterally offset with such surfaces and will engage only the unwiped conductive surfaces of the mating contacts 102. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide wiping surfaces disposed on a mating end of the connector housing for each of the prior connectors of Buchter et al., Roberts and Olsson in view of the teachings of Asick et al. The use of such laterally offset ramp wiping surfaces as disclosed by Asick et al. would provide protection for the contacts of the prior art connectors. The advantages of providing a cleaner electrical connection (as shown in figure 6 of Asick et al., since each ramp 78 is offset either to the left or right of a respective contact 80 and not directly in front,

the mating contact 102 will wipe only along the edges and not the central portion. Therefore, the central portion of the mating contact is always clean and free from rubbed housing insulation) by providing such laterally offset wiping surfaces is also inherent in the construction of the ramp wiping surfaces of Asick et al. Specifically, providing such laterally offset ramp wiping surfaces on a front mating end (mating ends 22 as shown in figure 2 of Olsson or figure 4 of Roberts) for each of the prior art connector housings of Roberts or Olsson would be of significant advantages for them, since, they each lacks wiping surfaces on their connector housings. The use of laterally offset wiping surfaces would also be of advantage and an improvement over the wiping surfaces 100 as disclosed by Buchter et al., since, his surfaces 100 are directly positioned in front of the contacts 82.

(10) New ground of rejection.

This Examiner's Answer does not contain any new ground of rejection.

(11) Response to argument.

Applicant argues with respect to issue number 1 that "no reference or combination of references, teaches that which is recited in each of the claims, of wiping surfaces being offset

laterally with respect to rearwardly located surfaces of contact". However, it is respectfully submitted that the reference to Asick et al. does positively show ramp wiping surfaces 78 being offset laterally with respect to rearwardly located contact surfaces of contacts 80. Such teachings of Asick et al. would suggest to one of ordinary skill in the art to provide similar ramp wiping surfaces for the front surfaces of the prior art connector housings. Applicant also argues that "one skill would not have interpreted Asick et al., to teach that the cam profiles 78 are interposed between the contact 80 and a front edge of the circuit board 60. The cam profiles 78 are only parallel to the contact 80 without being interposed between the contact 80 and a front edge of the circuit board 60". To the contrary, a review of figure 6 of Asick et al., reveal that the cam profiles 78 do indeed interposed between the contacts 80. Figure 7 of Asick et al. shows that wiping surfaces of such ramp profile are also being positioned behind a front edge of the circuit board 60. Also, the broad language "interposed" as recited in claim 1 without setting forth specific portions of the contacts does not limit that the wiping surfaces can be positioned in between any portions of the contacts and a front edge of the circuit board.

Regarding the primary references to Roberts, Olsson and Buchter et al., applicant argues that "in Buchter et al. the

lifting surfaces 100 coextend when in alignment with one another, and are not offset laterally with respect to one another". However, it is respectfully submitted that the reference to Buchter et al. was cited to show that the use of wiping surfaces on electrical connector is known. One of ordinary skill in the art having the teachings laterally offset front ramp wiping surfaces as taught by Asick et al. would have been suggested to construct the wiping surfaces 100 on the connector housing of Buchter et al. to be laterally offset with respect to his contact conductive surfaces. Applicant also points out "Olsson shows contact with contact face sections 50 that extend along channels 20. Each of the contact face sections 50 extends past the insulation to a front edge of the connector. Thus, the insulation is not interposed between the sections 50 and the front edge of the connector. No ESD protection advantage provided by such insulation would have been suggested by Olsson". However, it is submitted that the important of EDS protection was not originally emphasized by appellant prior to the brief. Nevertheless, as shown in figure 8 of Olsson, his contacts 50 are recessed from a front edge of the connector housing 10 and the shield 78. Therefore, the connector housing of Olsson also provide for EDS protection. Also, the language of claim 1 as recited by the present invention would have been readable on the combination of Olsson in view of Asick et al., since the

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laterally offset wiping surfaces as taught by Asick et al. would obviously have been provided on the rib portions 22 of Olsson. Such rib portions as shown in figures 7-8 of Olsson are interposed between the contacts and a front edge of the connector housing.

Applicant also points out that in Roberts, his connector housing insulation is not interposed between the contact ears 60 and a front edge of the connector. "No ESD protection advantage provided by such insulation would have been suggested by Roberts". However, as shown in figure 4 of Roberts, the insulation portions 82 clearly interposed between the contact ears 60 and front edge 22 of the connector housing. Also note that since the contact ears 60 are positioned a sufficient distance from the front edge of the connector housing, the danger of EDS is also minimized.

With respect to claims 11 and 13, applicant argues that "Asick et al., combined with Olsson, would not have taught one skilled how to provide wiping surfaces on a housing mating end that are closer to a shield than contacts". However, it is respectfully submitted that there seem to be no significant advantage by providing a wiping surface that is closer to the shield than the contacts. Also, even if such feature was important, it is known in the prior art to provide wiping surfaces that are closer to a shield than the contacts. For

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example, Buchter et al., in figure 2, clearly shows that the contact wiping surfaces 100 are closer to the front edge of shield 86 than the contacts 82.

Applicant also argues that "the purpose of the Asick et al. cam profiles are for a purpose that is different from that of the claims 11 and 13 on appeal. Each of claims 11 and 13 recites conductive surfaces on the contacts being rearward of the wiping surfaces, and the wiping surfaces being closer to a shield than are the contacts. In Asick et al., the contact surface 80 extends to a front edge of a circuit board". To the contrary, it seems that the purpose of applicant's wiping surfaces are similar to the wiping surfaces of Asick et al., since, they are both used to prevent undue wear of the contacts. Also, the advantages of applicant's laterally offset wiping surfaces are also inherent to the laterally offset wiping surfaces of Asick et al., since, they both contain similar structures. The primary reference to Buchter et al., as discussed above, also show that it is known to position the conductive surfaces of the contacts rearward of the wiping surfaces, and the wiping surfaces being closer to a shield than are the contacts. Regarding Asick et al., applicant also argue that one skilled would not have adapted structure on a circuit board to modify a connector. However, it is respectfully submitted, that the use of circuit boards in connector housings is old and well known. Also, as shown in figure 3 of Asick et

al., the circuit board 60 when installed in casing housing 14 could have been interpreted as a connector housing.

With respect to claim 3, applicant argues that the only way in which the prior art teaches that unwiped contact surfaces will be attained, is by extending the contacts 80 past the cam profiles 78, as taught by Asick et al. To the contrary, the teaching of attaining unwiped contact surfaces is inherent in the ramp wiping surfaces of Asick et al., since the front wiping surfaces are laterally offset with respect to rear conductive surface portions of contacts 80. It is not relevant that Asick et al. shows extending contacts 80 past the cam profiles 78, since unwiped contact surfaces are attained on the mating contact portions and not on contacts 80.

Finally, with respect to claims 8 and 18, applicant argues that "in Buchter the contacts are in recesses, but are not covered" and that "one skilled would not have been suggested by Asick et al., that the front tips of the contacts in Buchter et al. is to be covered". Again, it is respectfully submitted that the teachings of Asick et al. is not being relied on to show front tips of the contacts being covered, rather, the teaching of laterally offset wiping surfaces as taught by Asick et al. which attain unwipe contact surfaces of mating contacts as being claimed. Buchter et al., in figures 5a-5c, clearly show that the

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front tips of his contacts 82 are positioned behind and protected (covered) by the wiping ramps 100 from mating contacts 42.

For the above reasons, it is respectfully submitted that the teachings of applicant's inventions are obvious and attainable by the prior art of record, and that the final rejection of the claims be affirmed by this honorable board.

Respectfully submitted,
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